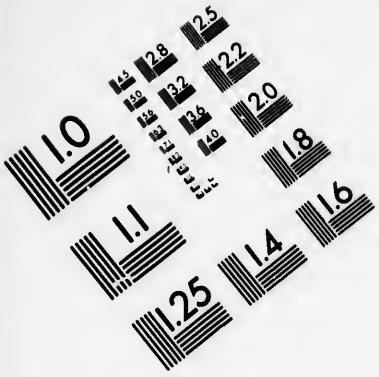

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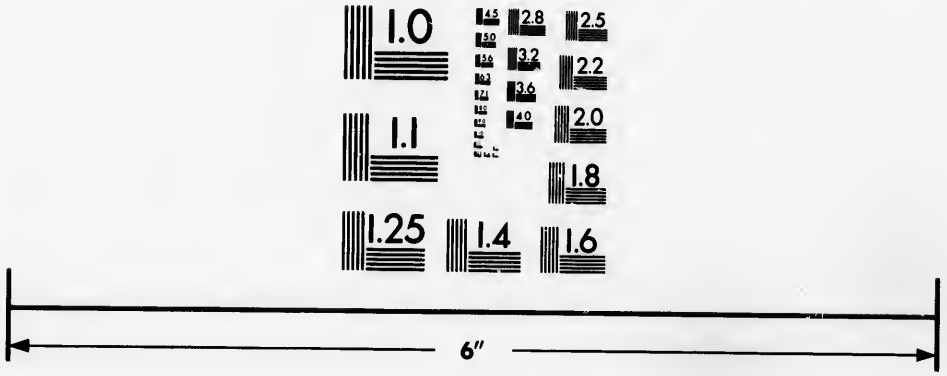

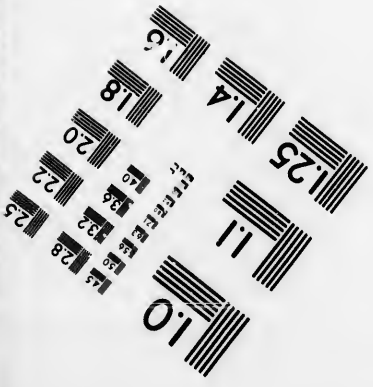

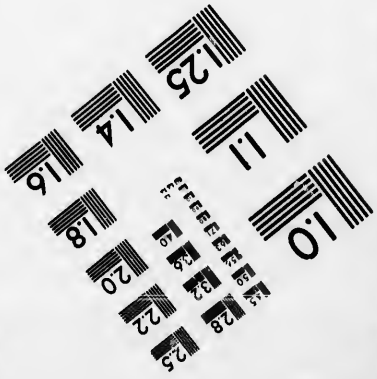

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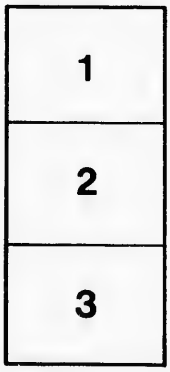

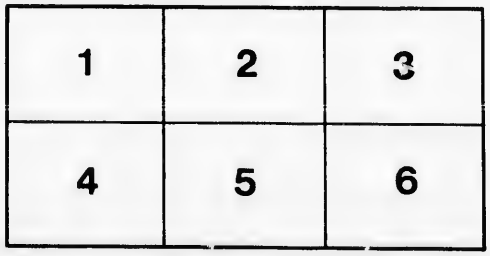

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"SCHOOL HELPS" SERIES.

ARITHMETIC EXERCISES

FOR SECOND BOOK CLASSES

BY

G. E. HENDERSON,
Editor of "The Canadian Teacher" and "The Entrance."

AND

E. W. BRUCE, B.A.,
Principal Huron Street Public School, Toronto.

Price, 12 cents; Teachers' Edition, with Answers, 15 cents.

THE EDUCATIONAL PUBLISHING COMPANY,
TORONTO, 1897.

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Entered according to Act of the Parliament of Canada, in the year one thousand eight hundred and ninety-seven by GEO. E. HENDERSON and E. W. BRUCE, at the Department of Agriculture.

PREFACE.

The authors of this series of Arithmetic "School Helps" offer no apology to the school public for the placing of their books as candidates for popular favor. The several numbers of the series are prepared by teachers actively engaged in the busy work of the schoolroom, and as teachers they know the great difficulty that the average teacher encounters in the presentation of new and crisp problems for his Arithmetic classes.

The authors would most respectfully request a consideration of the following points in connection with their series :—

I. **Mechanical Work.** After pupils have passed the Second Reader the usual text books provide but very scanty practice in the mechanical operations. Pupils instead of becoming swifter and more accurate as they advance in years frequently lose the speed and accuracy which they had acquired in the lower forms. To meet this difficulty the present series provides over 5,000 operations in mechanical work, which the teacher will find tested for him without the labor (and loss of time) of performing the work himself. This feature alone should commend the present series to every teacher of the subject.

II. **No Answers.** In the Pupils' Edition no answers are provided ; the Teachers' Edition alone contains the answers.

III. **Saving in Time.** The time of the teacher is too valuable to be taken up in the dictation of problems to a class, when for a mere trifle each pupil may be provided with a set of exercises for himself.

IV. Writing. The possession of these exercises by the scholars will tend to preserve his handwriting—it prevents the mad rush in copying questions from dictation.

V. Understanding of Terms. Without giving formal definitions of terms, problems are specially constructed to fix in the pupil's mind a thorough understanding of the technical terms of Arithmetic.

VI. New Problems. The great majority of the problems of the series have been written specially for these "School Helps." They are not simply a re-arrangement of old, stereotyped problems.

VII. Problems Grouped. The problems are not arranged in the ordinary "hit and miss" fashion, but are grouped according to types, and carefully graduated in degree of difficulty.

VIII. Time Tests. The purely mechanical operations of addition, subtraction, etc., are intended to be done at a pupil's best speed, a specified time being allowed as the teacher's experience finds suited to the ability of his class.

IX. Book of Exercises. This series is not in any sense designed to displace either the teacher or the authorized text. There is no attempt to show how to teach; this is taken for granted. It merely furnishes ready to the teacher's hand bright, crisp, new problems with which to enforce his teaching.

THE AUTHORS.

Toronto, August, 1897.

Arithmetic for Second Book Classes

NOTATION AND NUMERATION.

Exercise I.

A.

Express in Arabic notation:

(1) Three hundred and eight.
(2) Seven thousand and forty-five.
(3) Four thousand, eight hundred and seven.
(4) Six thousand and four.
(5) Two thousand, five hundred.
(6) Twenty-five thousand.
(7) Fifty-nine thousand, two hundred and six.
(8) Two hundred and seventy-six thousand and seventy-nine.
(9) Eleven millions, eleven thousand and eleven.
(10) Two hundred and thirty millions, seven hundred and four thousand and sixty.

B.

Express in Roman notation: (1) 9; (2) 21; (3) 34; (4) 46; (5) 53; (6) 67; (7) 98; (8) 131, (9) 242; (10 479; (11) 537; (12) 790; (13) 1500; (14) 1611; (15) 1897; (16) 9000; (17) 21000; (18) 6408.

C.

Write in words: (1) 20705; (2) 61007; (3) 79000; (4) 90038; (5) 131130; (6) 801029; (7) 1234567; (8) 3150240; (9) 5060700; (10) 17117107.

Express in figures: (11) LXIV; (12) CXIX; (13)

CLX ; (14) CCXC ; (15) DCCXXXIX ; (16) XCVIII ; (17) XIX ; (18) MDCV ; (19) CCXLV ; (20) MMMDCXXVII.

(21) Write down, in order, all the numbers of four figures having 4 for the left hand figure, and 96 for the two right hand figures.

(22) Write down the greatest and least numbers that can be formed by using all the figures 8, 4, 0, 3.

(23) Write down all the different numbers that can be formed by using all the figures 5, 9, 7, and name the greatest and least.

(24) Write the notation and numeration table as far as millions.

Exercise II.—ADDITION.

A.

(1)	(2)	(3)	(4)	(5)
6587	6721	8472	1864	2476
3498	3843	3496	2637	8192
9876	4784	8385	8284	7278
5123	5679	4927	7961	6943

(6)	(7)	(8)	(9)	(10)
7842	5121	3147	2468	3579
2104	1202	1473	4682	5793
3352	9768	4731	6824	7935
7806	4576	7314	8246	9357

(11)	(12)	(13)	(14)	(15)
1357	7953	3468	5791	2479
3571	9537	4683	7915	4792
5713	5379	6834	9157	7924
7135	3795	8346	1579	9247
1356	7953	3468	5791	2479
3571	9537	4683	7915	4792

B.

(1)	(2)	(3)	(4)
13579	79468	24168	45073
35791	94687	41682	50734
57913	46879	16824	17345
79135	68794	68241	73451
91357	87946	82416	34517
13579	79468	24168	45173
35791	94687	41682	51734

(5)	(6)	(7)	(8)
48037	43724	84383	92913
32724	54262	64132	43829
65530	37147	47497	57164
63410	64003	36413	89327
98716	27708	65238	16403
93036	35457	13709	93684
76454	61502	83678	20298
32336	43735	24243	72016

(9)	(10)	(11)	(12)
65486	79138	63714	736
7439	8234	34723	46894
5439	53471	9878	7867
26734	23612	36	124
10329	479	912	69834
63471	5132	7368	2179
8238	12734	96734	35796
346	76	1397	27084

C.

Find the value of :

(1) 3269 + 729 + 8368 + 3987 + 606 + 73 + 98375 + 415.

(2) 6472 + 8733 + 4363 + 4854 + 2762 + 8756 + 9783.

(3) 1617 + 8743 + 7247 + 9621 + 265 + 406 + 8705.
(4) 47823 + 68421 + 70070 + 60504 + 68342 + 74289.
(5) $7687 + $9684 + $8479 + $4793 + $4694.
(6) 9164 cents + 1649 cents + 6491 cents + 4916 cents.
(7) 637 acres + 8499 acres + 7348 acres + 9267 acres.
(8) 3657 trees + 4692 trees + 865 trees + 95384 trees.
(9) Find the sum of CLXXVI., CLVIII., CLXII., CXLVII., XXXIV., XIX., XXVIII.
(10) Add together CMLXXXVII., CDLVII., DCC., DCCCLXXVI., DXCIII., DCCLXV., DCLIV.
(11) Find the sum of $76.83, $39.27, $48.95, $68.23, $10.99, $64.30, $59.83, $42.07.

Exercise III.

(1)

64 + 94 + 87 =
85 + 83 + 69 =
93 + 78 + 54 =
78 + 69 + 83 =
69 + 38 + 95 =
35 + 54 + 89 =

\+ + =

(2)

98 + 64 + 87 =
75 + 85 + 54 =
86 + 99 + 76 =
45 + 88 + 83 =
93 + 76 + 99 =
26 + 83 + 85 =

\+ + =

(3)

73 + 67 + 92 =
89 + 83 + 73 =
64 + 92 + 68 =
75 + 87 + 79 =
86 + 79 + 58 =
39 + 86 + 63 =
28 + 94 + 92 =
39 + 58 + 98 =

\+ + =

(4)

38 + 37 + 48 =
58 + 54 + 24 =
92 + 86 + 83 =
67 + 75 + 58 =
85 + 67 + 67 =
49 + 85 + 99 =
59 + 69 + 88 =
93 + 57 + 66 =

\+ + =

(5)

429 + 849 + 896 =
368 + 763 + 935 =
254 + 829 + 487 =
789 + 654 + 695 =
638 + 839 + 863 =
925 + 675 + 957 =

\+ + =

(6)

936 + 789 + 718 =
839 + 659 + 645 =
354 + 382 + 369 =
678 + 847 + 824 =
547 + 698 + 738 =
682 + 738 + 547 =

\+ + =

(7)

486	+	473	+	639	=			
864	+	734	+	487	=			
648	+	347	+	874	=			
365	+	862	+	748	=			
653	+	628	+	135	=			
536	+	286	+	351	=			
987	+	396	+	513	=			
879	+	963	+	898	=			
	+		+		=			

(8)

246	+	789	+	849	=			
462	+	897	+	498	=			
624	+	978	+	984	=			
257	+	345	+	365	=			
572	+	453	+	653	=			
725	+	534	+	536	=			
251	+	123	+	479	=			
836	+	444	+	794	=			
	+		+		=			

(9)

$8.25	+	$8.49	+	$4.86	+	$8.44	=
3.84	+	3.65	+	5.83	+	3.59	=
9.65	+	5.84	+	3.20	+	4.19	=
3.28	+	7.35	+	4.25	+	9.37	=
9.54	+	4.96	+	4.75	+	7.43	=
5.69	+	3.87	+	8.62	+	8.56	=
8.24	+	8.39	+	9.76	+	9.63	=
$	+	$	+	$	+	$	=$

(10)

$58.49	+	$93.28	+	$75.49	+	$68.45	=
63.82	+	39.45	+	78.64	+	68.38	=
95.48	+	67.37	+	69.83	+	73.49	=
73.69	+	98.54	+	85.96	+	36.47	=
89.74	+	38.46	+	93.28	+	95.83	=
56.93	+	85.64	+	82.47	+	86.59	=
82.47	+	39.83	+	64.56	+	59.72	=
$	+	$	+	$	+	$	=$

(11) Add vertically and horizontally, also from corners to corners opposite, (48 operations in addition):

1008	2106	828	1926	648	1746	468	1566	288	1386	108
126	1026	2124	846	1944	666	1764	486	1584	306	1206
1224	144	1044	2142	864	1962	684	1782	504	1404	324
342	1242	162	1062	2160	882	1980	702	1602	522	1422
1440	360	1260	180	1080	2178	900	1800	720	1620	540
558	1458	378	1278	198	1098	1998	918	1818	738	1638
1656	576	1476	396	1296	18	1116	2016	936	1836	756
774	1674	594	1494	216	1314	36	1134	2034	954	1854
1872	792	1692	414	1512	234	1332	54	1152	2052	972
990	1890	612	1710	432	1530	252	1350	72	1170	2070
2088	810	1908	630	1728	450	1548	270	1368	90	1188

Exercise IV.

(1) By continued addition add 55555 to 76893 ten times.
(2) Add 66666 to 68937 ten times.
(3) Add 77777 to 89376 ten times.
(4) Add 88888 to 93768 ten times.
(5) Add 99999 to 37689 ten times.
(6) Add 56789 to 46583 ten times.
(7) Add 67895 to 65834 ten times.
(8) Add 78956 to 58346 ten times.
(9) Add 89567 to 83465 ten times.
(10) Add 95678 to 34658 ten times.

corners

386	108
306	1206
104	324
522	1422
020	540
738	1638
36	756
54	1854
52	972
70	2070
90	1188

93 ten

ADDITION PROBLEMS.

Exercise V.

A.

(1) John has 1279 cents, James 1683, Charles 6784, and Thomas 7689. How many have they all?

(2) A man bought 986 bushels of wheat on Monday, 2436 on Tuesday, 777 on Wednesday, 846 on Thursday, 4683 on Friday, and 6749 on Saturday. How many bushels did he buy?

(3) How many are 683 horses, 396 horses, 425 horses, 783 horses, and 86 horses?

(4) Sarah obtained 374 marks, Kate 389, Minnie 567, Bertha 629, and Flory 704. How many marks did all together obtain?

(5) My mother is 43 years old. How old will she be in 39 years?

(6) I am 37 years old, and my father was 49 years old when I was born. How old is he now?

(7) Tom is 43 years old and John 29 years old. Find the sum of their ages 18 years from now.

(8) A man was born in 1817, and died at the age of 65. Find in what year he died.

(9) The sum of Fred and Frank's ages is 57 years. Find the sum of their ages 23 years from now.

(10) The sum of the ages of Lizzie, Daisy and Ethel is 86 years. Find the sum of their ages in 17 years.

(11) At what price must I sell a house which cost $3486 to gain $943?

(12) How far is it round a field 137 yards wide and 329 yards long?

B.

(1) How far is it round a field 7684 feet square?

(2) How many times will a clock which strikes the half hours, strike between 11.15 a.m. and 10.20 p.m.?

(3) How many years from the beginning of 2793 B.C. until the beginning of 1897 A.D. ?

(4) Find the sum of the numbers ending in 6 from 623 to 739.

(5) Find the sum of the fifteen numbers that can be expressed with the figures 4, 9 and 8.

(6) A has 235 acres of land, B has 37 acres more than A, C has as many as A and B together, and D as many as B and C together. How many acres have all?

(7) A man paid $537 for a span of horses, and $28 more than this for a carriage; how much must he sell them both for to gain $179?

(8) A farmer raised 576 bushels of corn, 943 bushels of wheat, 42 bushels more of rye than wheat, and 86 bushels more of peas than corn. How many bushels did he raise in all?

(9) My last month's expenditure was as follows: baker's bill $5.23; butcher's bill $14.87; groceries $13.45; fruit $4.36; rent $17.50; servant's wages $8.75; sundries $19.47. Required what I paid in all.

(10) Find the sum of all the numbers ending in 2 and 8 between 751 and 800.

(11) By selling his knife for 59 cents Tom lost 28 cents; what was the cost?

(12) If 8476 be added to 4937, then their sum added to 89674, and this last sum added to the sum of 73684 and 97681; what will be the total sum?

C.

(1) A grocer lost $897, and had $6534 left; how much would he have had had he gained $897 instead of having lost that sum?

(2) The population of a village was 1639; the next year it gained 431, the second year 917, the third year 547, the fourth year 632, and the fifth year 1876. What was the population at the end of the fifth year?

(3) Find the sum of all the odd numbers between 150 and 180.

(4) Find the sum of all the even numbers between 171 and 199.

(5) Eva has to come 3428 feet to school, Meta has 4296 feet to come, Alma has to come 2835 feet, and Olive 3338 feet. How many feet have all to come? How many feet do they all walk in the day in going to and from school to their homes?

(6) Allan rode 208 miles on his bicycle in May, 183 in June, 96 in July, 219 in August, and 235 in September; how far did he ride in the 5 months?

(7) A manufacturer made 4693 ploughs, 2836 reapers, 937 harrows, and 4693 straw-cutters. How many machines did he make?

(8) A man paid $38 for a set of harness, $162 for a buggy, and $95 for a horse, and sold them to gain the cost price. How much did he get for them?

(9) A lives 3465 feet north of a village, and B lives 7659 feet south of it. If C lives 4693 feet north of A, how far does he live from B.

(10) Hubert shot an arrow 138 feet up the road and another 284 feet down the road. How far had his little brother to go to bring these to him?

(11) Charles bought 382 cows in January, 229 in February, 862 in March, 925 in April, 1362 in May and 4673 in June. How many cows did he buy in the six months?

(12) In a factory they made 4693 yards of tweed, 1234 yards more flannel than tweed, 92 yards more cloth than flannel, and 86 more yards of blanketing than cloth. How many yards were made in all?

D.

(1) A newsboy sold 28 papers on Monday, 16 more than this on Tuesday, on Wednesday 5 more than on Tuesday, on Thursday 7 more than on Wednesday, on Friday 24 more than on Monday, and on Saturday as many as he sold on Tuesday and Wednesday. How many did he sell in the week?

(2) I owe a man $487, to a second man $369, to a third $15 more than to the first, and to a fourth $13 more than to the third. How much do I owe?

(3) A man left his property to his wife, three sons and four daughters. He left to each son $2175, to each daughter $1324, and to his wife as much as to a son and a daughter. How much did he leave to all?

(4) A merchant spent $4639 for dress goods, and $7563 for flannels. He sold the flannels at a gain of $329, and the dress goods at a profit of $279. How much did he sell the whole for?

(5) Washington was born in 1732, and Napoleon 36 years later. Napoleon died at the age of 53. In what year did he die?

(6) Three men enter into partnership; the first man puts in $3729, the second $2175, and the third man puts in $89 more than the sums put in by the other two. What sum did they all put in?

(7) Find the sum of all the different numbers of three figures each you can make by using the figures 5, 6, and 7.

(8) A speculator bought 4 lots for $1325 each. He sold the first for $197 more than the cost, the second for $234 more than cost, the third at a gain of $355, and the fourth at a gain of $287. How much did he receive for all?

(9) A farm cost $4395. A house was erected thereon, the cost of which for carpenter's work was $1379, mason's work $545, painter's work $165, and for other work $284. What was the cost of the farm and house?

(10) A school has six class-rooms. There are 39 boys and 28 girls in the first room; these numbers are reversed in the second room; in the third room there are 25 boys and 18 more girls than boys; in the fourth room there are 27 girls and 8 more boys than girls; in the fifth room there are 37 boys and 22 girls; and in the sixth room there are 19 girls and 26 more boys than girls. How many boys and girls attend the school and how many in all?

(11) How long a cord will it take to go twice round a field 4276 feet long by 2908 feet wide?

(12) Find the sum of all the numbers between 989 and 1009.

E.

(1) A man began business with 46 thousand dollars, and gained 225 hundred dollars. How much is he worth now?

(2) There are 31 days in January, 28 in February, 31 in March, 30 in April, 31 in May, 30 in June, 31 in July, 31 in August, 30 in September, 31 in October, 30 in November, and 31 in December. How many days are there in the year?

(3) A house has a double-parlor requiring 53 yards of carpet, 5 bed rooms requiring 24 yards each, a dining room requiring 38 yards, and 2 halls requiring the one 26 yards, and the other 33 yards. How many yards are needed for the house?

(4) The population of a city was 18350 in 1870; in the next ten years it had gained 13490; in the next ten it had gained 9643; and in the following six years the gain was 7425. How many inhabitants had it then?

(5) A man invested in trade $463 at one time, $235 at another, at another $1327, and at another $1040. How much must be added to these sums that the amount invested by him shall be increased three-fold?

(6) A man bought a house and lot for $5685. He spent $359 in improvements, paid $75 taxes, paid water rates $14, and sold so as to gain $1897. What did he sell the property for?

(7) A man made a sale. He sold his house for $8570, his piano for $285, his paintings for $367, his books for $287, his carpets for $284, his other furniture for $799, and his horse, carriages, and harness for $1000. What was the amount received from the sale?

(8) A farm consists of nine fields, having respectively 39, 24, 68, 29, 35, 82, 95, 67 and 83 acres. The garden contains 11 acres and the orchard 34 acres. Find the size of the farm.

(9) A gains in one year $764, B gains $236 more than A, C gains as much as A and B together, and D gains within $2 of as much as B and C together. How much did they all gain?

(10) A farmer has four flocks of sheep; in the first

there are 63 sheep and 35 lambs, in the second 194 sheep and 139 lambs, in the third 258 sheep and 237 lambs, in the fourth 527 sheep and 186 lambs. How many are there altogether?

(11) I sold a house for $754 and three lots for $462 each, and another house for as much as two lots. How much did I get?

(12) Find the sum of the twelve integers immediately following 1897.

SUBTRACTION.

Exercise VI.

A.

(1)	(2)	(3)
396452 169878	83549676 26937869	83765495 29498376
(4)	(5)	(6)
548369786 213864795	896473958 24789623	91864732 2867953
(7)	(8)	(9)
738654289 28675493	528738657 38564279	803620154 129587636
(10)	(11)	(12)
975869248 736928574	697892495 593469578	739586295 736795836

B.

Find the value of:

(1) 785901 − 394806.
(2) 3395170 − 564508.
(3) 72006599 − 3209589.
(4) 100000 − 1937.
(5) 289501 − 188605.
(6) 85625 − 24319.
(7) 8762900 − 1766458.
(8) 54413 − 28401.
(9) 137042601 − 82051205.
(10) 197001 − 150077.
(11) 87734 − 987.
(12) 600000 − 9999.
(13) 176000 − 1.
(14) 400500 − 70973.
(15) 967123 − 234567.
(16) 6253007 − 1400248.

C.

(1) 75693 and how many are 93395?
(2) 783662 and how many are a million?
(3) 583524 and how many are 3826992?
(4) 755483 and how many are 4839258?
(5) CMXLVIII and how many are 47386?
(6) 48 less than 786 + 157 = how many?
(7) 839 less than 965 + 1483 = how many?
(8) 7546 less than 4839 + 8644 = how many?
(9) 869374 less than $\overline{M}$ + DXC = how many?
(10) 54836 less than 93348 + 57389 = how many?

D.

(1) $14.29 − $3.17.
(2) $15.30 − $2.83.
(3) $16.25 − $9.84.
(4) $10.12 − $7.26.
(5) $20.01 − $2.85.
(6) $5 − $1.85.
(7) $1 − $ .46.
(8) $2 − $1.30.
(9) $2 − $1.07.
(10) $7 − $6.25.
(11) $40 − $23.17.
(12) $25 − $15.45.
(13) $20 − $13.41.
(14) $15 − $12.15.
(15) $50 − $29.06.

Exercise VII.

A.

(1) What number will leave 8639 when 7554 is taken from it?

(2) What number will leave 7339 when 6250 is taken from it?

(3) What number will leave 960099 when 700339 is taken from it?

(4) What number will leave 53477 when 96754 is taken from it?

(5) From MMDLXVIII take MCDLVII.

(6) From MMMDCCLXXXIV subtract MMDCXLII.

(7) Take MMDCCXLVII from MMMCMLXV.

(8) Find difference between LXXX DCXXXV and LXXII DCCXLVII.

(9) How much greater is 496874 than 285987?

(10) How much smaller is 35706 than 50793?

(11) How much must be taken from 4593 to leave 497?

(12) How much must be added to 21076 to make 53904?

B.

Find the value of:

(1) $496+763+891-201-295$.

(2) $12543+679+2374-3948$.

(3) $9308-975+2376+846-999+318-76$.

(4) $16400+(7486-4592)-1234$.

(5) $18368-9476+7429-87+248-91$.

(6) $(76849-9736)-(7685+1924)-7483$.

(7) $\$352+\$667.45-(\$15.87+\$247.69)$.

(8) $\$87925-\$12764+\$7237-\$18759$.

(9) $\$89763-\$4927-\$5864-\$7586$.

(10) $876784+7999+8870-964-6388-8975+897+956-7858-9289+73-94$.

Exercise VIII.

A.

(1) A man had \$387.95 deposited in a bank at the beginning of the month. He paid bills as follows by cheques during the month: \$4.75; \$5.69; \$10; \$8.13; and \$49.15. How much was there to the man's credit in the bank at the end of the month?

(2) Deposit $497.63. Checks: $142.15; $16.85; $2.36; $17.95; $75.24.

(3) Deposit $569.24. Checks: $215.12; $42.89; $47.36; $3.85; $2.25; $15.

(4) Deposit $968.43. Checks: $33.85; $23.49; $37.64; $19.39; $3.47; $5; $17.05.

(5) Deposit $1000. Checks: $139.25; $14.98; $17.65; $2.17; $25; $18.68; $13; $124.76.

(6) Deposit $1364.58. Checks: $43.65; $92.80; $83.67; $37.15; $245.58; $24.68.

(7) Deposit $2875.96. Checks: $249.84; $3.17; $13.95; $267 54; $306.27; $17.42.

(8) Deposit $3960.75. Checks: $134; $25.73; $79.86; $1000; $297.46; $4.25; $310.18.

(9) Deposit $100. Checks: $3.05; $2.17; $4.08; $4.55; $13.72; $8.47; $9.40; $5; $4.79.

(10) Deposit $55009. Checks: $3435.87; $5.43; $2945.28; $3.87; $999.88; $15.89; $1200.

B.

(1) Subtract 555555 ten times in succession beginning to subtract from 6913536.

(2) Subtract 666666 ten times in succession from 11395253.

(3) Subtract 777777 ten times in succession from 13674242.

(4) Subtract 888888 ten times in succession from 14061867.

(5) Subtract 999999 ten times in succession from 11234557.

(6) Subtract 135791 ten times in succession from 2345564.

(7) Subtract 246824 ten times in succession from 2885523.

(8) Subtract 987654 ten times in succession from 11111107.

(9) Subtract 345678 ten times in succession from 5690225.

(10) Subtract 579468 ten times in succession from 12573579.

SUBTRACTION PROBLEMS.

Exercise IX.

A.

(1) By how much does 346795 exceed 235468?

(2) I give a 100-dollar bill in paping an account of $86.57. How much change should I get?

(3) I bought a horse for $187; a cow for $39 and a sheep for $8. I paid $59.35 down. How much have I yet to pay?

(4) Mr. Jones and Mr. Smith live, respectively, 1246 miles and 498 miles west of the same city. How far apart do they live?

(5) To what number must 314217 be added three times to make 1324108?

(6) The sum of two numbers is 869; one is the difference between 738 and 1096; find the other.

(7) From the sum of 876472 and 98349 take the difference between these numbers.

(8) Find the sum of the ages in 1897 of three men who were born in 1828, 1849 and 1853 respectively.

(9) A man had $497 in a bank; he drew out $345, deposited $476, and then drew out $74. How much remained to his credit in the bank?

(10) Find the number of minutes between 8.35 a.m. and 9.17 p.m.

(11) A boy threw his rubber ball 49 feet against a wall and it rebounded 17 ft. How far was it then from him?

(12) A boy threw his ball 73 feet against a barn and it rebounded to within 28 feet from him. How far did it rebound?

B.

(1) I paid $75 for a horse and $27 for a harness and gave both for a buggy worth $130. Find my gain.

(2) I paid $129 for a lot and $634 for a house, and traded both for a place worth $2300. How much difference did I give?

(3) A man paid $7334 for a farm and $236 for repairs. He rented it for one year for $734 and then sold it for $8500. Find his gain.

(4) A father and his two sons earned $2783. The father earned $1735 and the elder son $640. How much did the younger son earn?

(5) In a city there are 733864 people. There are 342576 females. How many more males than females are there?

(6) Find the number from which if 82239 be taken the remainder will be 73546 less 32298.

(7) Glass was invented in England in 664, yet it only began to be used in windows in 1180. How many years were there from its discovery till its use?

(8) Coals were first brought to London in 1357. How many years is it since?

(9) How many years have elapsed since the discovery of America in 1492?

(10) A merchant sold a quantity of goods for $29768, which was $979 more than they cost. Find the cost?

(11) A man owns property to the amount of $56792, and owes $26084. How much is he worth?

(12) I bought a knife for 47 cents. How much change should I receive out of a $2-bill?

C.

(1) A man died in 1895, aged 87 years. In what year was he born?

(2) A man owning $41937, paid at one time $7254, and at another time $19568; how much does he still owe?

(3) What number increased by the difference between 1548 and 2967, will make the sum of 3264, 784 and 8017?

(4) The sum of four numbers is 936278; the first is 24839, the second is 12835 less than the first, the third is 32146 more than the second. Find the fourth.

(5) At an election the whole number of votes was 3968; the defeated candidate received 1387. What was the majority?

(6) Find the final remainder in subtracting 58324 as many times as possible from 247609.

(7) From the difference between 479 and 8725 take the difference between 29203 and 28345.

(8) What is the final remainder on taking 2 dozen and seven as often as possible from 9 dozen?

(9) A merchant having $16327.75 gave $5394 for a store and $8275.25 for goods. How much has he left?

(10) A man has $9785. How much more would he need to buy a farm for $12427.

(11) A and B began business worth $4235 each. A gained $1345 and B lost $387. How much is A worth more than B now?

(12) How many years have passed since each of the following events:

(a) Queen Victoria was born in 1819.
(b) Vaccination commenced in 1799.
(c) Ottawa was selected Capital of Canada in 1858.
(d) Washington was born in 1732.
(e) First photographs were produced in England in 1802.
(f) Atlantic cable was laid in 1866.
(g) Printing was invented in 1437.
(h) Wire was invented in 1410.

D.

(1) Three persons, A, B, and C. agree to buy a summer hotel. A agrees to pay $9470, B to pay $10468, and C the balance. If the hotel is valued at $27940, how much is C to pay?

(2) A grocer deposited in a bank on Monday $129, on Tuesday $234, on Wednesday $354, on Thursday $329, on Friday $475. He drew out during the five days $1368. How much has he still in the bank?

(3) A merchant paid $13467 for sugar, paid $928 for freight, paid $34 for cartage, and then sold at a loss of $1000. How much did he get for it?

(4) On Monday morning a bank had on hand $1500. During the day $2500 was deposited and $3275 withdrawn. On Tuesday $5950 was deposited and $2685 withdrawn. How much was in the bank for Wednesday morning?

(5) A ship dealer bought a vessel for $29575, and gave as part payment a farm worth $13968 and the balance in cash. How much cash was paid?

(6) A man left $87500 to his wife, a son and a daughter. To the son he left $33725, to his daughter $24680, and the rest to his wife. How much did he leave his wife?

(7) A man died owning property valued at $75000, of which $36800 was in real estate, $27985 on mortgaged security, and the remainder in the bank. How much had he in the bank?

(8) To what number must you add 769 four times to make 3596?

(9) I bought a horse for $285 and a buggy for $140. I sold the horse for $347 and the buggy for $207; how much did I gain?

(10) A merchant had $573.29 cash on hand at the beginning of the day, he received during the day $405.95, and paid out $169.84. What is his cash balance at the end of the day?

(11) The sum of three numbers is 4864. The first is 1732 and the second 389 less than the first. What is the third number?

(12) What four different numbers each greater than 186 will make 754?

MECHANICAL WORK.

Exercise X.

A.—ADDITION.

(1)	(2)	(3)	(4)	(5)
76894	68947	89476	94768	47689
68947	89476	94768	47689	76894
23456	34567	45678	56789	67891
78912	89123	91234	12345	23456
34567	45678	56789	67891	78912
89123	91234	12345	23456	34567
45678	56789	67891	78912	89123
91234	12345	23456	34567	45678
56789	67891	78912	89123	91234
12345	23456	34567	45678	56789
67891	78912	89123	91234	12345
23456	34567	45678	56789	67891

(6)	(7)	(8)	(9)	(10)
13579	24682	35791	24568	35679
35791	46822	57913	45682	56793
57913	68224	79135	56824	67935
79135	82246	91357	68245	79356
91375	22468	13579	82456	93567
13579	24682	35791	24568	35679
35791	46822	57913	45682	56793
57913	68224	79135	56824	67935
79135	82246	91357	68245	79356
91357	22468	13579	82456	93567
13579	24682	35791	24568	35679
35791	46822	57913	45682	56793

(11) Add 478932 ten times in succession to 239874.
(12) Add 976845 ten times in succession to 548679.

B.—SUBTRACTION.

(1) Subtract 76843 ten times in succession beginning with 847903.

(2) Subtract 84376 ten times in succession from 890142.

(3) Subtract 35692 ten times in succession from 400000.

(4) Subtract 333444 ten times in succession from 5123472.

(5) Subtract 555666 ten times in succession from 6492731.

(6) Subtract 777888 ten times in succession from 9103507.

(7) Subtract 292929 ten times in succession from 3417741.

(8) Subtract 393939 ten times in succession from 4713987.

(9) Subtract 440055 ten times in succession from 5903309.

(10) Subtract 789987 ten times in succession from ten millions.

(5)
47680
76894
67891
23456
78912
34567
89123
45678
91234
56789
12345
67891

(10)
35679
56793
67935
79356
93567
35679
56793
67935
79356
93567
35679
56793

9874.
8679.

MULTIPLICATION.

Exercise XI.

A.

(1) Write the multiplication table of 2 times. Re-write the table with 1 added to each multiple.

(2) Write the table of 3 times. Re-write with 1 and 2 added, respectively.

(3) Write the table of 4 times. Re-write with 1, 2, and 3 added, respectively.

(4) Write the table of 5 times. Re-write with 1, 2, 3 and 4 added, respectively.

(5)	(6)	(7)	(8)	(9)
12453	21768	71459	37896	13579
2	2	2	2	2
(10)	(11)	(12)	(13)	(14)
24719	18673	45927	84769	24685
3	3	3	3	3
(15)	(16)	(17)	(18)	(19)
41768	93572	51473	61425	98756
4	4	4	4	4
(20)	(21)	(22)	(23)	(24)
51763	67895	14037	24864	79356
5	5	5	5	5
(25)	(26)	(27)	(28)	(29)
79846	51937	24682	15379	41826
23	32	24	42	34
(30)	(31)	(32)	(33)	(34)
69427	94268	31794	58376	91238
45	53	25	43	124

B.

(1) Write the multiplication table of 6 times. Re-write the table with 1, 2, 3, 4 and 5 added, respectively.

(2) Write the table of 7 times. Re-write with 1, 2, 3, 4, 5 and 6 added, respectively.

(3) Write the table of 8 times. Re-write with 1, 2, 3, 4, 5, 6 and 7 added, respectively.

(4) Write the table of 9 times. Re-write with 1, 2, 3, 4, 5, 6, 7 and 8 added, respectively.

(5)	(6)	(7)	(8)	(9)
12976	84637	29415	51789	37462
6	6	6	6	6

0) 41986 7	(11) 61793 7	(12) 58472 7	(13) 45687 7	(14) 58769 7
(15) 31472 8	(16) 24689 8	(17) 51733 8	(18) 48562 8	(19) 95768 8
(20) 45796 9	(21) 58624 9	(22) 67391 9	(23) 78762 9	(24) 94278 9
(25) 21345 67	(26) 34982 68	(27) 74163 69	(28) 28876 78	(29) 92943 79

C.

(1) Write the table of 10 times ; and re-write with 1 to 9 added, respectively.

(2) Write the table of 11 times ; and re-write with 1 to 10 added, respectively.

(3) Write the table of 12 times ; and re-write with 1 to 11 added respectively.

(4) 41723 10	(5) 34176 10	(6) 81920 10	(7) 71304 10	(8) 50892 10
(9) 51982 11	(10) 24687 11	(11) 37912 11	(12) 40876 11	(13) 21936 11
(14) 20724 11	(15) 37291 11	(16) 56778 11	(17) 43392 11	(18) 98676 11

(19)	(20)	(21)	(22)	(23)
13579	24668	93764	51227	68693
12	12	12	12	12
(24)	(25)	(26)	(27)	(28)
93571	46882	37692	42478	69894
12	12	12	12	12

Exercise XII.

A.

(1) What two numbers multiplied together give the following: 24; 25; 30; 36; 40; 42; 45; 49?

(2) What are the factors of: 50; 54; 56; 60; 63; 64, 66; 70; 72; 80; 81; 84; 90; 96; 100; 121; 144?

Multiply, using factors:

(3) 357 by 27.
(4) 8654 by 35.
(5) 5432 by 48.
(6) 17834 by 33.
(7) 76892 by 40.
(8) 12476 by 42.
(9) 20462 by 66.
(10) 81739 by 18.
(11) 48067 by 54.
(12) 82430 by 20.
(13) 85917 by 56.
(14) 26485 by 64.
(15) 104748 by 36.
(16) 327017 by 81.
(17) 650304 by 44.
(18) 616936 by 27.
(19) 418317 by 45.
(20) 768947 by 14

B.

(1) 84790632×32.
(2) 60975843×34.
(3) 75400967×47.
(4) 9485379×59.
(5) 3478596×68.
(6) 2875943×76.
(7) 5463759×87.
(8) 3459376×100.
(9) 8594863×406.
(10) 4785932×610.
(11) 4893546×726.
(12) 6004379×943.
(13) 548593×5423.
(14) 640795×9307.
(15) 91463897×4875.
(16) 948627×12345.

Exercise XIII.

A

Perform the following multiplications :

(1)

1234 × 27 =
3456 × 27 =
5678 × 27 =

× 27 =

(2)

2345 × 93 =
3905 × 93 =
2631 × 93 =

× 93 =

(3)

76142 × 84 =
14273 × 84 =
91326 × 84 =

× 84 =

(4)

51706 × 203 =
32654 × 203 =
44376 × 203 =

× 203 =

Multiply from left to right and by columns, and prove by multiplying the products.

(5)

3 × 5 × 7 × 3 × 4 =
4 × 5 × 3 × 9 × 7 =
6 × 5 × 7 × 2 × 6 =

× × × × =

(6)

2 × 3 × 8 × 9 × 7 =
3 × 5 × 3 × 4 × 6 =
4 × 2 × 1 × 3 × 5 =

× × × × =

(7) Multiply 56789 by 999.
(8) Find product of 123456 and 9999.
(9) Multiply 213579 by 32164.
(10) Find the product of 246846 and 96248.
Multiply each of the following numbers by itself: (11) 1612 ; (12) 2418 ; (13) 4836 ; (14) 7254.
(15) Multiply 59731 by 6 ten times in succession.

B.

Find the value of the following :
(1) 136 × 73 × 21 × 4 × 7 × 6.
(2) 824 × 0 × 67 × 193.
(3) (12 × 13) + (16 × 14) + (23 × 27) + (35 × 35).

(4) $(23-17)\times(69-43)\times(2187-1938)$.
(5) $64-29+48-57+70-31+52\times21$.
(6) $(97546\times12)-(64579\times11)$.
(7) $31+47\times5+27+39\times6+15+16\times7$.
(8) $189-54-6\times8\times9+761-83$.

NOTE :—Nos. 5, 7, 8 have been worked in the order of signs.

BILLS AND ACCOUNTS.

Exercise XIV.

(1) Find the amount of the following bill: 18 lbs. sugar at 9 cents a lb., 12 lbs. butter at 18 cents a lb., 3 lbs. tea at 35 cents a lb., 14 lbs. of biscuits at 10 cents a lb., and 3 lbs. cheese at 18 cents a lb.

(2) Find the amount: 14 lbs. coffee at 31 cents, 17 lbs. of pork at 14 cents, 23 lbs. of honey at 9 cents, and 18 lbs. of lard at 9 cents.

(3) Find the amount: 37 yards of cloth at 85 cents, 14 lbs. butter at 16 cents, 25 lbs. sugar at 6 cents, 16 dozen eggs at 14 cents.

(4) Mr. Smith bought the following articles from his grocer: 12 lbs. lard at 8c., 19 lbs. butter at 21c., 12 lbs pork at 10c., 13 lbs. rice at 9c., 12 lbs. raisins at 9c., and 18 lbs. cod fish at 12c. What did the bill cost him?

(5) Find the cost of the following bill: 8 yards silk at $1.20, 7 yds. calico at 8c., 19 yds. muslin at 7c., 3 yds. flannel at 37c., and 16 yds. ribbon at 42c.

(6) What is the value of 9 tubs of butter weighing 54, 58, 52, 53, 58, 56, 52, 49 and 56 pounds, respectively, at 18c. a pound?

(7) Make out the following in bill form and receipt it: To-day John Trollope bought from you,—18 lbs. sugar at 9c., 12 lbs. butter at 28c., 3 lbs. tea at 45c., 8 lbs. coffee at 34c., 14 lbs. biscuits at 11c., 16 lbs. soap at 13c., 3 lbs. cheese at 15c., and 3 dozen eggs at 16 cents.

(8) Mr. Arthur Parmley bought from you to-day :— 104 bus. turnips at 40c., 76 bus. beets at 74c., 113 bus. parsnips at 84c., 67 bus. onions at 73c., 147 bus. tomatoes at 43c., and 50 dozen cabbage at 50c. Render him an itemized account giving him credit for $250 in part payment.

(9) Mrs. Sinclair bought 5 handherchiefs at 39c., 2 dozen buttons at 43c., 12 yds. ribbon at 26c., 2 yds. of silk velvet at $3.25. She handed the merchant a ten and a five-dollar bill, how much change did she get?

(10) Find the amount of the following butcher's bill : 17 lbs. pork at 13c., 16 lbs. beef at 14c., 18 lbs. mutton at 12c., 17 lbs. veal at 13c., 11 lbs. lamb at 19c., and 25 lbs. ham at 15c.

MULTIPLICATION PROBLEMS.

Exercise XV.

A.

(1) How much will 749 lbs. of sugar cost at 8 cents per pound?

(2) What will 238 barrels of flour cost at $6 per barrel?

(3) How much will it cost to have 456 loads of sand hauled at 85 cents per load?

(4) Find the cost of 2463 barrels of pork at $13 a barrel.

(5) Find the cost of 109 building lots at $364 a lot.

(6) What will it cost to build 11 houses at $5439 each?

(7) Find the value of 2637 bushels of wheat at 93 cents a bushel.

(8) A farmer went to Manitoba and bought a farm of 640 acres at $37 an acre. What did the farm cost?

(9) A drover bought 387 horses at $109 each. What did all cost?

(10) What will it cost to build a telegraph line from London to Toronto, a distance of 145 miles, at $1327 a mile?

(11) If the hands of a factory turn out 987 yards of cloth on the average every day, and there are 312 working days in the year, how many yards are manufactured in the year?

(12) A company of soldiers contains 12 lines. How many men are there in the company if each line has 843 men?

B.

1. There are 320 rods in a mile. How many rods is it from Toronto to Hamilton, a distance of 40 miles?

(2) A clerk's salary is $72 a month. He spends $27 a month. How much does he save in a year?

(3) Find the cost of building 904 miles of railway at $25347 a mile.

(4) A man sold 39 barrels of vinegar, each containing 31 gallons, at 39c. a gallon. What did he receive?

(5) A man working 11 hours a day at 29c. an hour, will earn how much in a week?

(6) What is the value of 45 tons of hay at $13.25 a ton?

(7) What is the cost of 222 bales of cotton at 13c. a pound, if each bale contains 444 lbs?

(8) What is the difference in cost between 164 head of cattle at $36.45 each, and 970 sheep at $6.27 a head?

(9) The distance from Brantford to Harrisburg is 8 miles. There are 1760 yards in a mile, and 3 feet in a yard. How many feet are the two places distant?

(10) An army consists of 8 divisions, each division of 4 battalions, and each battalion of 612 men; find the number of men in the army.

(11) How much would 123 horses at $127 each, and 36 cows at $34 each, all cost?

(12) A man had 400 yards of cloth. He sold 224 yds. to one man and 19 yds. to another. How much is the remainder worth at 86c. a yd.?

C.

(1) Out of a salary of $1335 a year, a teacher spends $200 for board, $55 for clothing, and $325 for other expenses. How much does he save in 11 years?

(2) A person bought 7 cows for $23.45 each. He paid $75 down; how much has he yet to pay?

(3) A farmer sold a load of wheat containing 41 bags of 2 bushels in each bag at 93c. a bushel. How much did he get for the load?

(4) A travels 36 miles a day, and B 45 miles. If they are going in opposite directions, how far will they be apart in 14 days? How far apart would they have been had they gone in the same direction?

(5) If 12 boys can do a piece of work in 36 days, how long will it take one boy?

(6) Multiply the difference between 70410 and 64014 by the sum of 17 and 8.

(7) A farmer owed a debt of $2837. He paid it by giving 138 sheep at $7 each, 50 cows at $27 each, and the balance in money. How much money did he pay?

(8) A grain merchant bought 3575 bushels of grain at 76c. a bushel, and sold it for 88c. a bushel. Find his gain.

(9) If 15 men work 15 days at a job, and each man gets $1.35 a day, how much will they all receive?

(10) Find the cost of 728 cords of wood at $4.65 a cord.

(11) What is the value of 314 geese at $1.45 a pair?

(12) A drover bought 147 cattle at $43 a head. He sold 42 of them at $56 each, 25 at $39 each, and the remainder at $61 each. Find his gain.

D.

(1) How much must be paid for 215 boxes of starch, each weighing 5 lbs., at 8c. per lb.?

(2) At the rate of $1.75 a day, how much will 16 men earn in 4 weeks?

(3) How much should a party of 6 persons pay for their board for a year at 65c. a day for each?

(4) What will a boy earn in 5 months, of 26 working days each, at 65c. a day?

(5) An army is made up of 33 regiments of infantry, each containing 800 men; 14 of cavalry, each containing 600 men; and 2 of artillery, each containing 300 men. The enemy has 6 more regiments of infantry, each containing 100 more men; 3 more regiments of cavalry, each containing 100 men less; and 4 corps of artillery of the same magnitude as those of the first. Two regiments of cavalry and one of infantry desert from the former to the latter. How many men has the second army more than the first?

(6) If a basket of peaches cost $1.55, what will two dozen baskets cost?

(7) On a branch of a railway 115 men are employed for 11 days, each man earning $1.25 per day. Find the sum paid for wages.

(8) A farmer sold 247 head of cattle at $39 each, and received in part payment $3987. How much remains due?

(9) A man has 12 piles of wood each containing 25 cords. Each cord contains 128 cubic feet. How many cubic feet has he?

(10) How many nails will be required to shoe 87 span of horses if it takes nine nails for each shoe?

(11) How many more cents are there in three times $16 than in 4 times $4.29?

(12) If an orchard contains 17 rows of trees with 17 trees in each row, and each tree yields 13 bushels of apples, how many bushels does the whole orchard produce?

MECHANICAL WORK.

Exercise XVI.

A.—ADDITION.

(1)	(2)	(3)	(4)	(5)
71468	14687	46871	68714	87146
14687	46871	68714	87146	71468
46871	68714	87146	71468	14687
68714	87146	71468	14687	46871
87146	71468	14687	46871	68714
71468	14687	46871	68714	87146
14687	46871	68714	87146	71468
46871	68714	87146	71468	14687
98714	87146	71468	14687	46871
87146	71468	14687	46871	68714
71468	14687	46871	68714	87146
14687	46871	68714	87146	71468

(6)	(7)	(8)	(9)	(10)
23456	34567	45678	56789	91357
45173	89713	62843	32684	24683
34562	45673	56784	67895	13579
51734	97138	28436	26843	46832
45623	56734	67845	78956	35791
17345	71389	84362	68432	68324
56234	67345	78456	89567	57913
73451	13897	43628	84326	83246
62345	73456	84567	95678	79135
34517	38971	36284	43268	32468
23456	34567	45678	56789	91357
45173	89713	62843	32684	24683

B.—SUBTRACTION.

Subtract 768349215 five times in succession from each of the following: (1) 3842980642; (2) 3844091753; (3) 3846313966; (4) 3848535198; (5) 3850658420.

Subtract 35764 ten times in succession from each of the following: (6) 466782; (7) 359827; (8) 479533; (9) 625743; (10) 698877.

C.—MULTIPLICATION.

Multiply each of the following by 4, ten times in succession: (1) 21769; (2) 43538; (3) 87076.

Multiply by 6 ten times in succession: (4) 11652; (5) 15536; (6) 34956; (7) 46608.

Multiply each of the following consecutively by 2, 4, 7, 8, and 9: (8) 12582; (9) 25164; (10) 29348; (11) 37746; (12) 50328; (13) 58716; (14) 75492; (15) 88074.

DIVISION.

Exercise XVII.

Work the following by long division, then by short division:

(1) 2)26904(	(2) 2)49158(	(3) 2)72436(	(4) 2)83194(	(5) 2)70386(
(6) 2)49975(	(7) 2)73749(	(8) 2)91207(	(9) 2)59727(	(10) 2)68557(
(11) 3)63408(	(12) 3)40425(	(13) 3)69447(	(14) 3)94128(	(15) 3)65691(
(16) 3)93373(	(17) 3(83069(	(18) 3)73702(	(19) 3)89051(	(20) 3)94478(
(21) 4)136688(	(22) 4)119404(	(23) 4)307356(	(24) 4)98748(	(25) 4)54316(
(26) 4)171653(	(27) 4)125906(	(28) 4)272590(	(29) 4)85879(	(30) 4)125913(

Exercise XVIII.

A.

Divide :

(1) 413579 by 2.
(2) 538694 by 2.
(3) 768147 by 3.
(4) 679680 by 3.
(5) 951476 by 4.
(6) 389135 by 4.
(7) 298765 by 5.
(8) 783472 by 5.
(9) 532147 by 5.
(10) 689427 by 6.
(11) 978663 by 6.
(12) 519800 by 6.
(13) 123456 by 7.
(14) 234567 by 7.
(15) 345678 by 7.
(16) 456789 by 7.
(17) 314151 by 8.
(18) 467893 by 8.
(19) 598304 by 8.
(20) 678003 by 8.
(21) 79432 by 9.
(22) 80397 by 9.
(23) 56894 by 9.
(24) 79983 by 9.

B.

Find the quotient and remainder :

(1) $2814873 \div 6$.
(2) $3411724 \div 7$.
(3) $5465037 \div 8$.
(4) $6706056 \div 9$.
(5) $1973248 \div 10$.
(6) $2176503 \div 11$.
(7) $3740087 \div 12$.
(8) $1234567 \div 9$.
(9) $2345678 \div 8$.
(10) $3456789 \div 7$.
(11) $6770219 \div 10$.
(12) $5701983 \div 10$.
(13) $1270589 \div 11$.
(14) $2762152 \div 11$.
(15) $5236443 \div 12$.
(16) $3365687 \div 12$.
(17) $6733842 \div 12$.
(18) $9182183 \div 9$.
(19) $9246605 \div 8$.
(20) $6246862 \div 7$.
(21) $4580253 \div 7$.

C.

Divide by factors and find true remainder :

(1) 456217 by 14.
(2) 967352 by 18.
(3) 890036 by 24.
(4) 715129 by 27.
(5) 834503 by 49.
(6) 594000 by 48.
(7) 703679 by 36.
(8) 897952 by 33.
(9) 190864 by 77.
(10) 372060 by 72.
(11) 620314 by 108.
(12) 508375 by 56.
(13) 362408 by 35.
(14) 279013 by 42.
(15) 552637 by 132.
(16) 847039 by 81.
(17) $258497 \div 64$.
(18) $998877 \div 144$.

Exercise XIX.

A.

Divide:

(1) 123456 by 13.
(2) 234567 by 17.
(3) 345678 by 19.
(4) 456789 by 23.
(5) 249893 by 29.
(6) 486932 by 31.
(7) 869324 by 37.
(8) 693248 by 41.
(9) 932486 by 43.
(10) 6475839 by 47.
(11) 4758396 by 53.
(12) 7583964 by 59.
(13) 5839647 by 123.
(14) 8396475 by 247.
(15) 3964758 by 358.
(16) 9647583 by 476.
(17) 36326599 by 1342.
(18) 14002564 by 1871.

B.

(1) 241768÷94.
(2) 5118862÷127.
(3) 17902976÷208.
(4) 15403736÷316.
(5) 2082600÷325.
(6) 271541350÷386.
(7) 15704325÷507.
(8) 14988456÷414.
(9) 29784450÷435.
(10) 15920205÷2345.
(11) 600236÷97.
(12) 765870÷98.
(13) 38214÷99.
(14) 38673498÷998.
(15) 7281711÷999.
(16) 7036293÷869.
(17) 14130081÷3759.
(18) 123614208÷3456.
(19) 148644288÷2036.
(20) 31812417÷8463

Exercise XX.

Divide each of the following numbers by 7 ten times in succession: (1) 3291401601348; (2) 4937102402022; (3) 9874204804044: (4) 14811307206066.

Divide each of the following by 8 ten times in succession: (5) 13606456393728; (6) 20409684590592; (7) 40819369181184; (8) 612290537771776.

Divide each of the following by 9 ten times in succession: (9) 26541402860412; (10) 53082805720824; (11) 79624208581236; (12) 159248417162472.

Divide each of the following by 2, 3, 4, 6, 2, 3, 4, 6, consecutively: (13) 387991296; (14) 443418624; (15) 517321728; (16) 775982592; (17) 1551965184; (18) 3103930368.

Exercise XXI.

Perform each operation in order:

(1) $6\times3-2\div4\times7+5\div3\times7-5\div6\times8-6\div10\times7+1\div8+2\times10$.

(2) $16+3\times2+2\div5\times6+3\div3+1\times2+4\div4\times7+2\div3-2\div11\times25$.

(3) $19+6\div5\times12\div4\times8+1\div11\times12+3\div5+1\div2\times6\div7+1\times3+1\div8$.

(4) $51\times13\times3\div9\times119\div7\times13$.

(5) $761\times8-80\times600\div32\div5+3525\div9$.

(6) $4522\times99\div119$.

(7) $31349\times38556\div282\div391$.

(8) $(98945+69497+8399+38765+34567+42947)\div47\div9$.

(9) $(45\times38\times76)\div(357158\div43)$.

(10) $15+20+20+15-40+33-20+47+11-60$.

(11) $347+253+89-234\div7\times8-132\times37-10\div9$.

(12) $748964+85679+856748+1896343\div179$.

(13) $(809\times14)+(5919122\div43)$.

DIVISION PROBLEMS.

Exercise XXII.

A.

(1) When flour is $8 a barrel, how many barrels can be bought for 34560 dollars?

(2) A man has 4 equal lots of land, containing in all 5528 acres. How many acres are there in each lot?

(3) If 484 sheep cost $4356, what will one sheep cost?

(4) If 326 barrels of flour weigh 63896 pounds, what is the weight of a barrel?

(5) If 858 acres produce 24882 bushels of wheat, how much will one acre produce?

(6) A father, dying, left property worth $37356 to be divided equally among his wife, two sons, and three daughters. Find the share of each.

(7) A grocer bought 15 barrels of flour for $100, and sold it at a gain of $20. What did he get a barrel for it?

(8) If 19 horses and 28 cows are worth $2623, and 10 horses are worth $850, find the value of 17 cows.

(9) Divide a legacy of $8575 equally among 98 persons.

(10) How many yards of print at 12 cents a yard can be got for the price of 86 bushels of oats at 30 cents a bushel?

(11) A farmer gave 255 bushels of wheat worth $1.18 a bushel for 30 sheep. How much per head did the sheep cost him?

(12) A man has $1785 in five-dollar bills. How many bills has he?

B.

(1) How many times is $6 contained in $108234?

(2) A box contained 15552 eggs; how many dozen were there?

(3) A man bought 25 cattle at $24 a head, 15 at $32 a head, and 12 at $29 a head. For how much a head must he sell them to gain $80 on the whole?

(4) If a man earn 71 cents and a boy 15 cents a day, how many days will it take both to earn $187.48?

(5) A grocer bought a quantity of coffee for $226.20, and sold it for $281.88, gaining thereby 16 cents a pound. How many pounds did he buy?

(6) A boat carried 34627 passengers, taking 86 passengers every trip but the last one. How many passengers were on the last trip?

(7) A man sold 7 cows at $56 each, and 24 pigs at $7 each. With the money he bought 28 sheep; what was the value of a sheep?

(8) A coal merchant bought coal at $5 a ton, and sold it at $6.50 a ton, gaining thereby $27. How many tons did he buy?

(9) When horses are selling at $135 each, how many cows at $27 each, must I receive in exchange for 47 horses?

(10) Ten flocks of sheep, each flock having 50 head, were sold for $4000. Find the price per head.

(11) If 5 barrels of cider are worth $20, how many tons of hay, at $12 a ton will 9 barrels of cider buy?

(12) How many times is XIX contained in the difference between 121304 and one million one thousand and ten?

C.

(1) A drover bought 29 cattle at $34.48 each; he sold 18 of them at $38.50 each. For how much each must he sell the rest to gain $185.66 on the whole?

(2) How much must be added to eight thousand and ninety-six dollars to pay for an exact number of acres of land at $17 an acre, and have no money left?

(3) A man walked 45 miles on Monday and 52 on Tuesday; how far must he go on each of the other four days to go 305 miles in the week?

(4) A farmer goes to market with 60 bags of oats and sells at 35 cents a bushel, receiving therefor $47.25. How many pounds of oats to the bag?

(5) Divide $350 between two persons, giving one $25 more than the other.

(6) If 264 acres cost $12408, how many acres can be bought for $57575?

(7) Divide $760 between A and B, giving B $24 less than A.

(8) If 3 pears cost 9 cents, how many pears should be given in exchange for 12 hens worth 23 cents each?

(9) A wealthy merchant distributed to 965 poor people, in an equal proportion, 876432 pounds of flour; how many pounds had he over?

(10) If a yard of satin cost $1.75, how many yards can be bought for $315?

(11) A bushel of barley weighs 48 lbs. Find the cost of 9312 lbs. of barley at 49 cents a bushel.

(12) If 16 pennies placed on top of one another just stand 2 inches high, how many pennies so placed will make a column 4 feet in height?

AVERAGES.

Exercise XXIII.

Find the average of each of the following nine questions:

(1) 7, 9, 8, 5, 6.
(2) 8, 15, 19, 10.
(3) 31, 34, 40, 81, 104.
(4) 3, 7, 5, 8, 1, 4, 6, 7, 2, 7, 1, 9.
(5) 16, 19, 25, 29, 37, 43, 49, 46.
(6) 16, 0, 28, 30, 71, 99, 26, 9, 18.
(7) 119, 341, 559, 784, 319, 842.
(8) 82, 79, 78, 74, 73, 71, 69, 66.
(9) 574, 664, 587, 419, 626, 604.

(10) Five pupils obtained the following marks at an examination, 61, 35, 73, 23, 83 respectively. What was the average mark?

(11) If there were 42 pupils in a class on Monday, 46 on Tuesday, 45 on Wednesday, 46 on Thursday, and 41 on Friday; what was the average attendance for the week?

(12) The aggregate weight of 9 oxen was 13617 pounds, what was their average weight?

(13) A man earns $1428 in a year. How much is that on an average a month?

(14) A paper boy sold papers during the week as follows: 47, 43, 42, 48, 49, 53 on each day respectively. How many papers is this on an average per day?

(15) The total number of pupils attending 17 schools is 697. Find the average number of pupils to each school.

(16) A farmer sold 4 cows for $46 each and 5 cows for $37 each. What was the average selling price of each cow?

(17) A grocer mixes 4 lbs. of tea worth 30 cents a lb., 5 lbs. worth 33 cents, and 6 lbs. worth 35 cents. What is the mixture worth per pound?

(18) A man has a salary of $1000; for the first 8 months he spends on the average $75 a month, and for the remainder of the year he spends on the average $85 a month. How much does he save in the year?

CANCELLATION.

Exercise XXIV.

(1) Find the quotient in each of the following cases, and notice the results: $78624 \div 6048$; $13104 \div 1008$; $1872 \div 144$; $234 \div 18$; $26 \div 2$.

What is the quotient of:

(2) $21 \times 11 \times 3 \times 26$ divided by $13 \times 6 \times 7$.

(3) $15 \times 25 \times 49 \times 64$ divided by $5 \times 24 \times 35$.

(4) $5 \times 7 \times 11 \times 24 \times 42$ divided by $2 \times 9 \times 20 \times 22$.

(5) $19 \times 36 \times 35 \times 15$ divided by $4 \times 19 \times 25$.

(6) $21 \times 18 \times 10 \times 65$ divided by $13 \times 45 \times 35$.

(7) $\dfrac{48 \times 49 \times 50 \times 51}{34 \times 70 \times 35 \times 24}$.

(8) $\dfrac{54 \times 56 \times 57 \times 60}{42 \times 72 \times 30 \times 38}$.

(9) $\dfrac{28 \times 32 \times 36 \times 45}{81 \times 20 \times 56 \times 16}$.

(10) $\dfrac{10 \times 12 \times 14 \times 16 \times 18}{42 \times 20 \times 4 \times 72}$.

(11) $\dfrac{18 \times 20 \times 21 \times 22 \times 24}{63 \times 60 \times 44 \times 12}$.

(12) $\dfrac{21 \times 22 \times 24 \times 25 \times 27}{45 \times 15 \times 16 \times 77}$.

(13) $\dfrac{0 \times 32 \times 33 \times 34 \times 35}{17 \times 14 \times 40 \times 44 \times 5}$.

(14) $\dfrac{50 \times 54 \times 56 \times 63 \times 60}{35 \times 45 \times 72 \times 42 \times 24}$.

(15) $\dfrac{30 \times 32 \times 33 \times 35 \times 36 \times 38 \times 39 \times 40 \times 42 \times 44 \times 45}{50 \times 44 \times 24 \times 84 \times 15 \times 19 \times 13 \times 60 \times 24 \times 77 \times 54}$.

MECHANICAL WORK.

Exercise XXV.

A.—ADDITION.

(1)

98432
13768
23456
78912
34567
89123
45678
91234
56789
12345
67891
23456

(2)

84926
71826
45678
91234
56789
12345
67891
23456
78912
34567
89123
45678

(3)

66447
59381
67891
23456
78912
34567
89123
45678
91234
56789
12345
67891

(4)

23344
57686
89123
45678
91234
56789
12345
67891
23456
78912
34567
89123

(5)

91027
66368
12345
67891
23456
78912
34567
89123
45678
91234
56789
12345

(6)

35798
47632
57983
76324
79835
63247
98357
32476
83579
24763
35798
47632

(7)

57983
76324
79835
63247
98357
32476
83579
24763
35798
47632
57983
76324

(8)

79835
63247
98357
32476
83579
24763
35798
47632
57983
76324
79835
63247

(9)

93857
32476
38579
24763
85793
47632
57938
76324
79385
63247
93857
32476

(10)

65842
79365
58426
93657
84265
36579
42658
65793
26584
57936
65842
79365

B.—SUBTRACTION.

Subtract 357698 ten times in succession from each of the following: (1) 4518748; (2) 4234873; (3) 3794768; (4) 3994673; (5) 4355879.

Subtract 4430762 ten times in succession from each: (6) 45530406; (7) 51485511; (8) 53221196; (9) 57097254; (10) 66096755.

C.—MULTIPLICATION.

Multiply each of the following by 357: (1) 17838; (2) 26757; (3) 35676; (4) 53514; (5) 71352; (6) 80271.

Multiply each of the following by 648: (7) 11492; (8) 17238; (9) 22984; (10) 25857; (11) 34476; (12) 51714.

Multiply each of the following by 9 ten times in succession: (13) 11892; (14) 17838; (15) 35676; (16) 71352.

D.—DIVISION.

Divide each of the following by 7 six times in succession: (1) 2098622862; (2) 2798163816; (3) 4197245724; (4) 8394491448.

Divide each of the following by 8 six times in succession: (5) 4463788032; (6) 1487929344; (7) 2975858688; (8) 8927576064.

Divide each of the following by 2, 3, 4, 6, 9 in succession: (9) 22709808; (10) 30279744; (11) 45419616; (12) 68129424; (13) 90839232; (14) 136258848.

Divide each of the following by 723: (15) 19052496; (16) 25403328; (17) 28578744; (18) 38104992; (19) 57157488; (20) 76209984.

Divide each of the following by 654: (21) 17416674; (22) 34833348; (23) 52250022; (24) 69666696.

ANALYSIS.

Exercise XXVI.

A.

(1) If 4 oranges cost 12 cents, what will 7 oranges cost?

(2) If 8 apples cost 16c., what will 13 apples cost?

(3) What will 27 lemons cost if 3 lemons cost 6 cents?

(4) A newsboy saves 117 cents in 9 days; how much will he save in 17 days?

(5) If 8 copy-books cost 24 cents, find the cost of a dozen copybooks.

(6) If 40 cents will pay for 5 pounds of raisins, how much will $1.60 buy?

(7) When 52 cents are paid for 4 dozen of eggs, how much will 13 dozen cost?

(8) Find the cost of 12 lead pencils at two for three cents.

(9) A boy got 6 slate-pencils for 5 cents; how many should he get for a quarter?

(10) If 3 horses are worth as much as 7 cows, how many horses are worth 63 cows?

(11) If 18 men earn $3456 in 12 weeks, how much does each man earn in the week?

(12) A grocer bought 708 eggs at 18 cents a dozen. How much did they cost him?

B.

(1) James had 75 cents. He bought 2 dozen oranges and had 3 cents left. Find the cost of an orange.

(2) If 4 cords of wood cost $20, how much will 193 cords cost?

(3) A farmer exchanged 28 tons of hay, worth $9 a ton for 21 pigs; what was the value of each pig?

(4) A boy who has 70 apples gives 8 apples to each one in his class, and keeps the smallest share for himself. How many are there in the class?

(5) If a horse eats 2 gallons of oats in a day; how many bushels will he eat in 19 weeks, there being 8 gallons in a bushel?

(6) How much will 7 dozen of bananas cost at three for ten cents?

(7) A man receives a salary of $650. Out of this he saves $234 a year. How much does he spend per week?

(8) How many days would it take a man to walk 288 miles, at the rate of 4 miles an hour, and walking 9 hours a day?

(9) Divide 40 marbles between Bert and Warrie in such a way that as often as Bert gets 2 marbles, Warrie shall get 3 marbles.

(10) If four-fifths of a pound of tea cost 60 cents, what will a pound cost?

(11) If 18 men will build a wall in 4 days, how many men will build it in 6 days?

(12) Find the total cost of 40 apples at 5 for 3 cents, 30 peaches at 3 for 4 cents, and 21 oranges at 3 for 10 cents.

ON THE TERMS OF THE SIMPLE RULES.

Exercise XXVII.

A.

(1) The addends of an example are, 4763, 7634, 6347, 3476, 4763, 7634, 6347, 3476, and 4763: find the sum.

(2) The sum of four addends is 164918. If the sum of the first three addends is 85369, find the fourth addend.

(3) The first addend is 5438 and the fifth is 96. If the sum of the second, third and fourth addends is 18406, find the sum of all the addends.

(4) The minuend is 734271, the subtrahend is 241342, find the remainder.

(5) The subtrahend is 349806, the minuend is 758901, find the difference.

(6) Find the subtrahend when the remainder is 274850 and the minuend 329500.

(7) Find the minuend when the subtrahend is 567456 and the difference 6898220.

(8) Half the difference between the minuend and remainder 73509 ; find the subtrahend.

(9) The remainder is 19542 and the subtrahend is 18281. How much must be added to the minuend to make one hundred thousand?

(10) How much greater is the sum of 46095 and 28736 than their difference?

(11) The subtrahend is the sum of the addends, 37, 794, 87698, 32347, 63741, and 12734 ; and the minuend is the sum of the addends 437, 47, 8623, 24675, 59763, and 378694. Find the remainder.

(12) Find the difference between the sum and difference of 397086 and 786945.

B.

(1) The multiplicand is 37942, the multiplier 386 ; find the product.

(2) The multiplier is 584 and the multiplicand 27403. What is their product?

(3) Find the product when the multiplicand is 2067 larger than the multiplier which is 179.

(4) The difference between the multiplicand and the multiplier is 37585. The multiplicand is 37642 ; find the product.

(5) The product is 601344 and the multiplier 216 ; find the multiplicand.

(6) The multiplicand is 47672 and the product is 11155248 ; find the multiplier.

(7) The divisor is 612, the dividend 475524 ; find the quotient.

(8) The quotient is 4372, the dividend 3156584 ; find the divisor.

(9) The divisor is 643, the dividend 5926431 ; find the quotient and the remainder.

(10) The quotient is 5679, the dividend is 3214664 ; find the divisor and the remainder.

(11) The remainder is 499, the divisor 675, and the dividend 14293624 ; find the quotient.

(12) The dividend is 56243121, the remainder 39, and the quotient 81987 ; find the divisor.

C.

(1) The dividend is 786935846 and the remainder is 2534 ; find the product of the quotient and the divisor.

(2) When the divisor is 1047, the quotient 474536, and the remainder 523 ; find the dividend.

(3) The product of the quotient and divisor is 508144 and the remainder 398 ; find the dividend.

(4) The divisor and quotient are equal ; their sum is 19608. Find the dividend when the remainder is 407.

(5) Divide the product of 642 and 462 by their difference.

(6) The product of two numbers is 2540748, and the half of one of them is 3129 ; what is the other number?

(7) The divisor is 28, the quotient is 6 times the divisor, and the remainder is one-seventh of the quotient. Find the dividend.

(8) The product is 2394696, and the multiplier is 678. What is the multiplicand?

(9) Of what number is 74609 both divisor and quotient?

(10) What number multiplied by 538362 will make 4984155396?

(11) What number subtracted from seven hundred thousand and six will make the remainder exactly divisible by nine thousand and forty?

(12) The product of two numbers is 45356736, one of the numbers is 276 ; find the other.

D.

(1) Multiply 4909876 by 9876 and divide the product by 2454938.

(2) Divide 11987326734 by 1798.
(3) Multiply 916378 by the factors of 84.
(4) The addends are 9456, 7869, 8376, 9584, 87698, 74583, 69489. Find the sum.
(5) Divide 976837463 by 947 and prove your answer.
(6) The sum of three numbers is 7064. The first is 2876, the second 709 more than the first; find the third number.
(7) How often can 13 be taken from 243997?
(8) Multiply 789642 by 7093.
(9) Add the difference between 4326 and 1809, to the difference between 1007 and 674.
(10) How much must I add to the difference between 1768 and 2003 so as to make the sum of 1786 and 9473?
(11) If nine hundred and fifty be taken from 133574, how many times will the remainder contain 216?
(12) If 78 be added 27 times to 849, what will be the difference between the result and 80000?

GENERAL REVIEW PROBLEMS.

Exercise XXVIII.

(1) Divide $1724.85 equally among 5 men.
(2) Divide $15614 into 74 equal parts.
(3) Find one-sixth of 61242 pounds.
(4) Find one-eighth of 34176 miles.
(5) How many yards are there in one-eleventh of 391776 yards?
(6) How many dozen are there in 221340 pins?
(7) Find the number of 5-cent pieces in $768.95.
(8) How many feet are there in 45768 inches?
(9) How many minutes are there in 341760 seconds?
(10) Find the number of days in 400200 hours.
(11) Write in words 700600 and MDCIX.

(12) A boy has 96 cents. How many marbles can he buy with his money if 3 alleys cost 2 cents, and an alley is worth 9 marbles?

(13) What number must be added to 954398 to make a number exactly equal to the product of 4070 and 40950?

(14) A farmer bought 78 horses at $148 each. At what price must he sell them to gain $234?

(15) If 8 men can do a piece of work in 9 days, in how many days would 12 men do three times as much work?

(16) If $837 be taken from $29027 thirteen times, how many dollars would be left?

(17) Find the cost of 1809 bushels of wheat if 48 bushels cost $44.64.

(18) Find the amount of 23 lbs. of butter at 22c., 67 lbs. of cheese at 9c., 87 lbs. of flour at $2 per cwt., and 3000 lbs. of coal at $5 a ton.

(19) A farmer exchanges 2040 lbs. of oats at 30c. a bushel, for wheat at 50c. a bushel. How many bushels of wheat does he receive?

(20) If a wagon cost $47, and sells for $66, how many must be sold to gain $3591?

(21) Find the cost of 1404 oranges at 17 cents per dozen.

(22) The total cost of 59 sheep and 89 horses was $7000. The sheep cost $4 each. Find the price of a horse.

(23) What number contains 399 as often as 574848 contains 576?

(24) How much do all these things come to: A dozen lead-pencils at 3c. each, 16 slate-pencils at 2c. each, 9 bottles of ink at 4c. each, 13 work-books at 4c. each, and a 15-cent school bag?

(25) How much does it cost a year to heat a school house, if there are 87 tons of coal burned, worth $6.25 a ton?

(26) A man worth $19000 lost at one time $3427, and at another time $1946. How much has he remaining?

(27. A merchant deposited in a bank on Monday $584, on Tuesday $759, on Wednesday $463. He withdrew during that time $1298. How much has he still in the bank?

(28) How much would 83 horses at $87 each, and 59 cows at $51 each cost?

(29) How much have I left out of $10 after paying for 8 pairs of geese at 58 cents each?

(30) A man paid $964 for a farm, $386 more than this for a house, and as much for stock for the farm as for the farm and house together. Find how much all cost.

(31) James had 136 marbles, John had 5 times as many, and Dick had 7 times as many as John and James together. How many marbles had Dick?

(32) Find the total value of: 180 lambs at $5.50 each, 56 cows at $37 each, 125 calves at $5.75 each, and 25 horses at $117 each.

(33) A man bought 120 cords of wood at $3.15. He sold 35 cords at $3.75, 28 cords at $4.25, and the remainder at $3 5c. Find his gain.

(34) A grocer bought 27 turkeys for $18.36. He sold them at a gain of 7 cents on each. Find the price received for one.

(35) A drover bought 3 dozen sheep at $6.75 each, He kept them at an expense of $11.85, and then sold them at $7 25 each. What did he gain?

(36) A woman buys 14 yds. cotton at 13c., 24 lbs. tea at 30c., and 13 lbs. butter at 12c. What does her bill amount to?

(37) Divide 86732961 by 180, using the factors 9, 4, and 5, and find the true remainder.

(38) A farmer bought 32 cows at $45 each, and 12 horses at $90 each. He lost 8 cows and 3 horses, and sold the remaining cows at $60 each and horses at $120 each. How much did he gain or lose altogether?

(39) John sold 15 turkeys at 75 cents each, 12 geese at 45 cents, 18 lbs. butter at 25 cents, 36 lbs. cheese at 15 cents, and 45 gallons syrup at $1.20 a gallon. How much sugar at 6 cents a lb. can he buy with all the money he receives?

(40) Find the cost of 8964 cans of corn at 90 cents per dozen cans.

(41) Find the difference between the product of 87 and 75 and twelve times their sum.

(42) What change should you get out of a ten-dollar bill after paying for 27 lbs. of tea at 35 cents per pound?

(43) Oats weigh 34 lbs. and barley 48 lbs. to the bushel. How many bushels of barley will weigh as much as 168 bushels of oats?

(44) If 86 horses cost $4816. What will 37 horses cost at the same rate?

(45) Find the total cost of 17 lbs. of butter at 18c., 29 lbs. cheese at 13c., 78 lbs. rice at 7c., 19 lbs. tea at 45c., 215 lbs. sugar at 4c., and 13 lbs. coffee at 27c.

(46) Divide 78934729 by 12 by short division, and write after each line of figures its name.

(47) A farm laborer received $17 a month and his board. At the end of three years he had saved $360; how much did he spend on an average each month?

(48) For a flock of 21 sheep and 43 lambs a farmer received $444. He got $15 each for the sheep. How much did he get for each lamb?

(49) Mr. Jones has four farms. In the first there are 125 acres, in the second 24 acres more than in the first, in the third 18 acres more than in the second, and 75 acres in the fourth. How many acres of land has he?

(50) A boy had 85 cents in one pocket and 67 in another. He bought a book for 35c., a slate for 8c., and a copy-book for 7c. How many cents had he left?

(51) A man put $399 in the bank on Monday, $47 on Tuesday, $896 on Wednesday, $63 on Thursday, and $126 on Friday. On Saturday he drew out $729; how much remained in the bank?

(52) Ella had 200 pears. She ate 12 of them and gave away 6 times as many as she ate. How many had she left?

(53) A man sold his house for $7520, and his furniture for $2155. They cost him $12500; how much did he lose?

(54) Take 29074c683 from 9072860018, and add 123456789 to the remainder.

(55) How much will 17 firkins of butter, each weighing 59 pounds, cost at 13 cents per pound?

(56) Add 709640, 20931, 681, 2964, 18, 20963, 118, 96, 25674, CXIX, LXXIV, DCLXXVIII.

(57) Find the cost of 13 chests of tea, each weighing 37 lbs., at 49 cents per pound.

(58) A man having $7014 bought 19 sheep at $18 each, 17 cows at $46 each, and 89 acres of land at $46 an acre. How much money had he left?

(59) Find the total cost: 39 yds. cotton at 7c. a yd., 64 yds. of print at 14c., and 53 yds. muslin at 19c.

(60) A mechanic earns $90 a month; his expenses are $784 a year. How long will it take him to save enough to buy a farm worth $2960?

(61) How many pounds of tea at 78c. a lb. must be given for 375 bushels of wheat at $1.56 a bushel?

(62) If a certain farm house be worth $720, and the farm and barns be worth $400 less than five times as much, and the stock and standing crops be worth $125 more than thrice as much as the house, how much will the whole be worth?

(63) A woman sold 19 lbs. of butter for $4.75, 23 lbs. for $4.30, and 25 lbs. for $5.85. How many pounds did she sell, and how much did she get for the whole?

(64) Find the value of $98642 - 38715 + 27914 + 8671 - 5836 + 83967 - 46 + 798 - 48$.

(65) A has $6849, and B has 69 times as much as A. How many dollars have A and B together?

(66) Divide $937 between A and B, giving A $149 more than B.

(67) A farmer sold 786 bushels of wheat at 94 cents a bushel, and after spending $87.50 of the proceeds, divided what he had left equally between his two sons. How much did each son receive?

(68) Find the number equal in value to: $9793 \times 78 - 2461 + 394 \times 69 - 845 + 9035 \div 13$.

(69) If 24 dozen of eggs at 10c. a dozen are given in exchange for 16 lbs. of butter, find the value of 108 lbs of butter.

(70) If a basket holds four dozen apples and a barrel holds 576 apples, how many basketfuls of apples will fill 29 barrels?

(71) A person takes $1263 with him, and after travelling 17 weeks has $956.32 left. How much did he spend on an average each week?

(72) What is the least number, which, added to 873240, will make a sum which will contain 9327 exactly?

(73) If the divisor is 97, the quotient 2368, and the remainder the largest possible, what is the dividend?

(74) If the dividend be 48783, the quotient 27 and the remainder 237, what is the divisor?

(75) A farmer wishes to fence a field 2772 feet long and 1524 feet wide, with rails 12 feet long, the fence to be 6 rails high. How many rails will be required?

(76) How many bushels of oats worth 29 cents a bus. must be given in exchange for 145 bus. of wheat at 87 cents a bus.?

(77) Jane bought a bag of apples for 57 cents, and Mary bought a larger bag holding 8 apples more than Jane's for 81 cents. How many apples were in Mary's bag?

(78) Simplify $18368-9476+7429-807+419-368+7694+6947-9476$.

(79) If a train on the C.P.R. takes 3 hours to go from Toronto to Peterborough, a distance of 87 miles, how long should it take it to go from Toronto to Montreal, a distance of 324 miles?

(80) At a Fall Fair there were 18 horses, and each horse ran 23 times round the ring. The ring was 1326 ft. around. Find the total number of yards run by the 18 horses.

(81) A person worked 73 days at $2.45 a day; his expenses during this time were $1.27 a day. How much had he saved at the end of the time?

(82) How many cords of wood should be given for 66 sheep worth $6 each, when 8 cords of wood are worth $32?

(83) A farmer has 3 farms, the first containing 248 acres, the second 327, and the third 421. He wishes to divide them among his 5 boys so as to give the eldest boy twice as many acres as any of the rest. Find the eldest boy's share.

(84) A man bought 56 acres of land at $45 an acre, and 78 acres at $62 an acre; and sold the whole at $54 an acre. Did he gain or lose, and how much?

(85) A building contains 74 windows, each window containing 8 panes of glass. Find the cost of the glass at 8 cents a pane.

(86) A merchant bought 240 barrels of flour for $19.20, and sold it at $10.50 a barrel. Find his gain.

(87) A woman bought 4 lbs. tea at 45c., 7 lbs. butter at 22c., 13 lbs. sugar at 7c., and 4 dozen eggs at 11c. She gave in payment a five-dollar bill; how much change should she get?

(88) A farmer's wife bought goods to the value of $14.42. She gave the merchant $1.44 in cash, and paid the balance of the bill in butter at 22c. a pound. How many pounds of butter did she give?

(89) Mary has $1.45, and Jane has 3 times as much all but 25 cents. Alice has as much money as both together. How much money have the three girls?

(90) A grocer mixed 15 lbs. tea at 40 cents a lb., and 8 lbs. at 60 cents a lb., with 12 lbs. at 30 cents a lb. He sold the mixture so as to gain $7.30. Find the selling price per pound.

(91) Find the length in inches of 6 telegraph poles, three of which are each 35 ft. long, and the other three are each 55 ft. long.

(92) A has $6185, B has $15181, C has $858 less than A and B together, and D has as much as all the rest, how much have they all?

(93) Find three times the sum of (86×84), (98×92), (83×87), and (121×129).

(94) A man has a pail containing 18000 beans. How many drills, each 100 ft. long, will they plant if set 3 inches apart?

(95) Two boys run a race. One starts 100 yards ahead of the other. The first goes 10 yards and the second 12 yards in a minute. How long will the second boy be in overtaking the first?

(96) A man bought an equal number of apples and oranges for $11.25. He paid 3c. each for the oranges, and 2c. each for the apples. How many of each did he buy?

(97) What profit is made on the sale of 60 apples which cost 25c. a dozen, if they are sold at 21 cents for 9?

(98) What is the total cost of 49 geese at $1.90 a pair, and 2868 eggs at 13c. a dozen?

(99) A man bought a span of horses for $275. He hired them out at $12 a week, but paid $5 a week for their keep. At the end of 7 weeks he sold them for $250. How much did he gain or lose?

(100) A lady bought 17 yds. of silk at $1.25 a yd., 12 yds. of lining at 50c. a yd., 10 yds. of trimming at 45c. a yd., buttons for 75c., thread 42c., and silk twist for 60c. How much less than $40 did the bill amount to?

(101) A farmer's wife sold to a grocer 15 doz. eggs at 14c. a doz., and 27 lbs. butter at 22c. a lb. She received in payment 12 lbs. sugar at 11c. a lb., and cash for the balance. How much cash did she get?

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